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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,040	10/11/2005	Hidefumi Inoue	AZU-002	6695

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EXAMINER

LOPEZ, FRANK D

ART UNIT PAPER NUMBER

3745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/553,040	<b>Applicant(s)</b> INOUE ET AL.	
	<b>Examiner</b> F. Daniel Lopez	<b>Art Unit</b> 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/11/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

***Specification***

The specification is objected to because of the following informalities: the discussion of graph 6 is very confusing (see the discussion of the 112 rejection of claim 3 below). Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

Claims 3-5 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3 line 2-11 “the predetermined value is constituted of a first threshold line which is set corresponding to the input when the input falls within a low input region and is changed linearly with a first predetermined inclination with respect to a change of the input and a second threshold line which is set corresponding to the input when the input falls within a high input region and is changed linearly with a second predetermined inclination...with respect to a change of the input” is confusing for two reasons. It would appear that what is changing linearly with the input is the output (i.e. —an output— should be added before “is changed” in line 4 and 8).

Furthermore, the predetermined value is not changed between the first and second thresholds, since the predetermined value is for setting whether there is an emergency braking or normal braking. It would appear that when the rapid output increase means is operated and when the input is within a first range, then the output is changed linearly with a first predetermined ratio (inclination), and when the rapid output increase means is operated and when the input is within a second range, then the output is changed linearly with a second predetermined ratio (inclination), different from the first ratio.

In claim 4 line 9-11 “is arranged to be capable of coming into contact with the reaction disc and adjusts a distance between the valve plunger and the reaction disc” is confusing as to what is being referred to. It could be the holder, the plunger or the distance member. If it is the holder, the first limitation is redundant, since it is claimed in line 3-5.

In claim 5 line 10-12 "is arranged to be capable of coming into contact with the reaction disc and adjusts a distance between the valve plunger and the reaction disc" is confusing as to what is being referred to. It could be the sleeve, the plunger or the distance member.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Schonlau et al. Schonlau et al discloses a negative pressure booster comprising a power piston connected to a valve body (5) and dividing a space inside a shell into a constant negative chamber and variable chamber; an input shaft (connected to 2) connected to a valve plunger (37) both movably arranged in the valve body; a reaction disc (24) transmitting a reaction force from an output shaft (3) to the input shaft; vacuum (6, 30) and atmospheric (8, 30) valves in the valve body and controlled by movement of the plunger to control the communication of the variable chamber with vacuum and atmosphere, respectively; a rapid output increase means (including 10, 16), operated when the input shaft is moved at a speed equal or more than a predetermined speed, larger than a moving speed in a usual operation, and with an input equal or more than a predetermined value, which increases the output rapidly as compared with the usual operation time; wherein a start of operation of the rapid output increase means is controlled using a recess of the reaction disc (as shown by fig 2), formed by a pushing force from the valve plunger; wherein a cylindrical holder (10) slidably holds a facing end portion of the plunger, which faces the reaction disc, and adjusts a distance between the plunger and the reaction disc; wherein the holder has a recessed portion (formed by slanted portion of face 13) on a face facing the reaction disc, which does not contact the reaction disc under low input, but does contact the reaction disc under high

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input; but does not disclose that when the input is within a first range, then the output is changed linearly with a first predetermined ratio, and when the rapid output increase means is operated and when the input is within a second range, then the output is changed linearly with a second predetermined ratio, different from the first ratio.

Inherently, the same would happen to Schonlau et al, and therefore, the booster of Schonlau et al would have the two ranges.

Claims 1-3 are rejected under 35 U.S.C. § 102(b) as being anticipated by Dreischarf et al. Dreischarf et al discloses a negative pressure booster comprising a power piston connected to a valve body (100) and dividing a space inside a shell into a constant negative chamber and variable chamber; an input shaft (202) connected to a valve plunger (132) both movably arranged in the valve body; a reaction disc (152) transmitting a reaction force from an output shaft (148) to the input shaft; vacuum and atmospheric (including 130) valves in the valve body and controlled by movement of the plunger to control the communication of the variable chamber with vacuum and atmosphere, respectively; a rapid output increase means (including 180, 156), operated when the input shaft is moved at a speed equal or more than a predetermined speed, larger than a moving speed in a usual operation, and with an input equal or more than a predetermined value, which increases the output rapidly as compared with the usual operation time; wherein a start of operation of the rapid output increase means is controlled using a recess of the reaction disc (as shown by fig 1B), formed by a pushing force from the valve plunger; and when the input is within a first range, then the output is changed linearly with a first predetermined ratio (Panic Apply A, between vertical portion and end portion, fig 5), and when the rapid output increase means is operated and when the input is within a second range, then the output is changed linearly with a second predetermined ratio (ewnd portion of Panic Apply A, fig 5), different from the first ratio.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1-4 are rejected under 35 U.S.C. § 103 as being unpatentable over et al Tsubouchi in view of Schonlau et al. Tsubouchi et al discloses a negative pressure booster comprising a power piston (18, 19) connected to a valve body (43) and dividing a space inside a shell into a constant negative chamber and variable chamber; an input shaft (28) connected to a valve plunger (37) both movably arranged in the valve body; a reaction disc (54) transmitting a reaction force from an output shaft (55) to the input shaft; vacuum (39, 41a) and atmospheric (37c, 41b) valves in the valve body and controlled by movement of the plunger to control the communication of the variable chamber with vacuum and atmosphere, respectively; a rapid output increase means (including 40, 52), operated when the input shaft is moved at a speed equal or more than a predetermined speed, larger than a moving speed in a usual operation, and with an input equal or more than a predetermined value, which increases the output rapidly as compared with the usual operation time; that when the input is within a first range (between F11 and F12), then the output is changed linearly with a first predetermined ratio (between F011 and F02), and when the rapid output increase means is operated and when the input is within a second range (between F12 and F13), then the output is changed linearly with a second predetermined ratio (between F02 and F03), different from the first ratio; but does not disclose a start of operation of the rapid output increase means is controlled using a recess of the reaction disc, formed by a pushing force from

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the valve plunger. Note that If the length D (fig 2) of Tsubouchi et al is smaller than B, the plunger must move the reaction member (70) into the reaction disc, before the beveled edge (37b) of the plunger abuts the releasing bevel (52a), to go into the rapid output increase operation, meeting the above limitation; but Tsubouchi et al is silent about this.

Schonlau et al teaches, for a negative pressure booster comprising a power piston connected to a valve body (5) and dividing a space inside a shell into a constant negative chamber and variable chamber; an input shaft (connected to 2) connected to a valve plunger (37) both movably arranged in the valve body; a reaction disc (24) transmitting a reaction force from an output shaft (3) to the input shaft; vacuum (6, 30) and atmospheric (8, 30) valves in the valve body and controlled by movement of the plunger to control the communication of the variable chamber with vacuum and atmosphere, respectively; a rapid output increase means (including 10, 16), operated when the input shaft is moved at a speed equal or more than a predetermined speed, larger than a moving speed in a usual operation, and with an input equal or more than a predetermined value, which increases the output rapidly as compared with the usual operation time; that a start of operation of the rapid output increase means is controlled using a recess of the reaction disc (as shown by fig 2), formed by a pushing force from the valve plunger.

Since Schonlau et al and Tsubouchi et al are both from the same field of endeavor, the teaching disclosed by Schonlau et al would have been recognized in the pertinent art of Tsubouchi et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to control a start of operation of the rapid output increase means of Tsubouchi et al, by using a recess of the reaction disc, formed by a pushing force from the valve plunger, as taught by Schonlau et al, as a matter of engineering expediency. Clearly, this teaching teaches that the length D of Tsubouchi et al should be less than the length B.

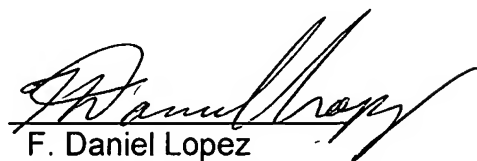
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**Conclusion**

Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. § 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571-272-4821. The examiner can normally be reached on Monday-Thursday from 6:10 AM -3:40 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.



F. Daniel Lopez  
Primary Examiner  
Art Unit 3745  
January 30, 2007